AMERICAN VETERINARY REVIEW,

JANUARY, 1884.

ORIGINAL ARTICLES.

POISON IN AMMONIA.

By J. C. MEYER, JR., M.D., V.S.

POISONING OF FIFTY-FOUR HORSES BY INHALATION.

October 14, at 8.30 p. m., an accident occurred at the establishment of the Ch. Moerlein Brewing Co., caused by the spontaneous separation of a joint connecting two pipes containing ammonia in the shape of gas used in the manufacture of cold air which is forced into the beer cellars of the brewery. This happened in a large room in the immediate vicinity of a door which leads into the adjoining stables of the establishment, that had been unwittingly left ajar. It being Sunday night, the doors of the stable opening into the street were closed, thus permitting the ammonia to escape directly into the midst of the horses, causing the immediate death of twenty-four head and the poisoning of thirty others to a greater or less extent. Through the timely arrival of assistance, a number of others were rescued without receiving any serious injury.

Shortly after the occurrence I arrived at the place, and the sight that met my eye by the aid of a dim light was most horrible. Carcasses of horses lying all over the stable floor and in the stalls. The stable flooded with water by the fire companies in order to mitigate the irritating effects of the ammonia. A couple half dead, moaning horses dragged out into the street that they might be revived if possible; in addition the intolerance of

the pungent ammoniacal atmosphere still contained within the stable walls, will leave a lasting impression upon those present.

I very soon became aware that my presence here was not momentous, and, after giving directions for the relief of the unfortunate lying in the street (unfortunate because they were not asphyxiated at once) I proceeded to the place where those rescued from the ill-fated stables were quartered. After they were gathered from the streets and neighboring stables I found that they numbered thirty. All suffered from the inhalation of the irritating gas to varying degrees of severity. To witness so many brutes suffering in this manner under one roof aroused the sympathy of the most unconcerned.

Only a few among them, probably three or four, seem to be but slightly affected. On the other hand a vast majority display very alarming symptoms. They in general look excited, with heads elevated. A few, however, are stupid, with heads pendent. They cough, without exception; it is of a short, painful character. Nostrils well dilated, with a bloody frothy discharge issuing therefrom in many instances; Schneiderian membrane and mucous lining of the buccal cavity are of a scarlet red color. Eyes are irritated; lids half closed; cornea turbid; lachrymation from one or both eyes is profuse in most cases. The skin is dry and hair staring. Some horses evince soreness upon touching them, in fact a few kick viciously when anything comes in contact with their skin. Frequent scanty acts of micturition are observed. The fœces passed is for the most part soft and in small quantities. Two patients have symptoms of colic; pawing, lying down and getting up every few minutes. The abnormal respiration is the most conspicuous symptom present. Nearly all breathe heavy, quick, and audibly; audibly, due to the presence of bloody froth in the nasal tract. On ausculation, noisy, rustling, blowing, whistling and friction sounds are detected in most cases. Such a variety of abnormal sounds are seldom encountered in ordinary lung diseases.

On percussion, an exaggerated resonance prevails in those cases where any alteration is perceptible. The pulse is considerably quickened and firm in most patients, but in those that are languid it is rapid and faint. In a few it is irregular. The tem-

perature is not much elevated yet—the thermometer registering less than 102° Fahrenheit.

October 15.—The general appearance of the patients is more listless. The febrile symptoms are well established, as indicated by the pulse, which numbers from 60 to 90 per minute, and the temperature ranging from 102° to 105°. The respiration is very much embarrassed. Cough exceedingly painful and hoarse. Eyes are mostly closed and cornea have a greyish appearance. The discharge from the nostrils varies in different animals; it is less frothy; in some it has changed to a sticky greyish mucus, in others to a rusty colored sputa, and in the most aggravated it is tinged with blood and coagulated particles of lymph, having the appearance of false membrane. The intense redness of lips, cheeks and tongue is vanishing. The flow of the salivary secretion is copious. The horses drink but little and even abstain from rinsing out their mouths in a pail of water. A few show some desire to eat bran-mash and hay. Their coat is staring and lusterless. A grey horse called Circus is quite restless; moves to and fro almost continually as far as his halter shank permits him. He paws occasionally and looks very anxious. Head elevated, nostrils dilated and respiration very much accelerated. He has a pulse of 120 per minute. A roan horse named Sam also presents very grave symptoms. He is in a profound state of apathy, hardly able to stand on his feet. Pulse almost inperceptible and respiration stertorous.

October 16.—Circus and Sam died early this morning. The general symptoms of the remaining are intensified. Several horses are restless. Bloody discharge from the nostrils prevails in some; in others it is thicker and more tenacious. Eyelids are either partially or entirely closed. When opened, excoriations of cornea the size of a pea are readily observed, surrounded by a greyish film. Cough is somewhat looser and less frequent. The horses now begin to drink water freely. Their mouths are decidedly better, less swollen and assume a more natural color. Circulation as a rule is rapid and weak. In some it is almost imperceptible. Heart strokes, however, can be easily felt, varying from 54 to 96 per minute. Respiration is very frequent and quite noisy owing to the presence of sloughs of the Schneiderian

membrane. A physical examination of the chest discloses about the same rough, blowing or shrill whistling sound as at former examinations, though in a few cases a circumscribed pulmonary hepatization can be detected by the limited absence of all murmurs and a well defined dullness on percussion. A soft mucous rale is heard over the bronchii. Temperature in general is on the decline. Four horses have been destroyed.

October 17.—An improvement in most patients is quite apparent. Cough is less distressing. They drink a large quantity of water; eat hay and sheaf oats immoderately. Performed tracheotomy on a grey horse, George, having considerable nasal obstruction, in fact so much so that he is restless and compelled to open his mouth at each inspiratory act to get a sufficient quantity of air. The operation affords him immediate relief. He has a pulse of 74 per minute and temperature of 105°. Removed numerous eschars from the nostrils of several patients, furnishing them decidedly better breathing facility. Two horses have been destroyed.

October 18.—Discharged all but eleven patients from the hospital shed. Symptoms of those remaining are as a whole satisfactory. Their breathing is easier, owing chiefly to the separation of the disorganized Schneiderian membrane. The removal of these sloughs is attended by some hemorrhage and naturally enough leaves excoriations. They open their eyelids wider and the corneas look better. Was obliged to perform tracheotomy on a bay horse, Joe, with very good result. This horse is the worst patient of all; has a pulse of 96, respiration 60 and temperature of 105°. George now is somewhat better; breathes easier with pulse 78 and temperature 104°. A bay horse, Charlie, also deserves special notice from the fact that he has a well defined attack of pneumonitis. His respiration is very much labored, pulse 72 and temperature 104¼°.

October 19.—The majority continue to improve; appetite increasing; symptoms all abated; cough not so frequent or severe; discharge from the nostrils is more pus-like, and quite offensive in some, though this offensive odor must be differentiated from that so characteristic in suppurative pneumonia. The assurance that this fetid smell does not come from the lungs can

be observed in the two horses having an artificial opening in their trachea. The expirium passing through the tubes is entirely devoid of smell while the air passing through the nostrils after shutting off the tube is very offensive.

October 20.—Discharged three horses; others doing well save Charley and Joe, which are still in a doubtful state. George is eating well and breathes without impediment. A large eschar is extracted from Charlie's left nostril; it is elliptical in shape, 5 inches long, 2 inches wide and as thick as harness leather; smaller ones are removed from Joe and a few others.

October 21.—The gross symptoms do not vary much. A grey horse, Barney, has a chill; his temperature is 104° and his pulse 76 per minute, and looks somewhat despondent. Charley has considerable breathing difficulty, not only attributable to his lung trouble but also to his nasal obstruction. To relieve this, a tube is introduced into his trachea, from which flows a large quantity of pus of an offensive odor, unquestionably proceeding from abscesses in the lungs. This phenomenon alone is sufficient to warrant his destruction, but from the fact that his breathing is rendered more comfortable by the use of the tube, I conclude to postpone it. Joe breathes very fast, about 60 per minute, but has no trouble in his nasal passages now. His pulse is 84 per minute; temperature 100° and appetite fair.

October 22.—Condition of all patients is encouraging save Charlie's. He is getting quite weak. Fell while being led across the floor, but rose without assistance. Recognizing the fact that no chance for his recovery remains, I ordered him destroyed. Joe lies down frequently; his symptoms are still quite important, but he has a good appetite. Barney's pulse and temperature continue well up, but otherwise looks favorable.

October 23.—Horses all improving. Excepting Joe's, their pulses range from 42 to 66 per minute and the thermometer registers below 103°. Appetite is fair and they lie down to rest. The breathing, however, in general, is markedly accelerated. The corneal opacity in some still prevails. It is needless to state that emacation has become quite obvious by this time. They all have a slight mucous discharge from their nostrils and an occasional cough.

Considering the present favorable prospects I do not deem it interesting to continue a diurnal report. The only patient worthy of attention is Joe, who is still doubtful.

Up to November 5 Joe's condition has been fluctuating considerably. His respiration has been incessantly labored, numbering from 25 to 40 per minute; his pulse was never less than 75 per minute, and sometimes would reach 90. On the other hand his temperature remained in the vicinity of 101°. His lungs are in an emphysematous state. His appetite has during all this time been excellent.

November 6.—He suddenly exhibits symptoms of purpura hemorrhagica; a strange complication, indeed, when we reflect upon the etiology. His legs are swollen and hot and so painful he is scarcely able to move them. Petechia of a pale red color abound in the Schneiderian membrane in great numbers. His appetite is unimpaired.

November 7.—The swelling of his limbs now extends above his hock and knee joints. His temperature is 104° and pulse 82 per minute. Harry, a brown gelding that has thus far been doing reasonably well, taking on flesh and enduring a daily gentle exercise without fatigue, is attacked with a dyspnœa and a frequent, painful, short cough due to a highly emphysematous condition of his lungs. A purgative is administered and the allowance of hay shortened.

November 8.—The swelling of Joe's limbs is still on the increase. Several circumscribed swellings appear on the sternum. His febrile condition is in *status quo*. Appetite good. A black gelding called Doc, that had resumed work for the past two days, is unreasonably swollen about his ankles. He also has a bunch on his left hock joint. This looks rather suspicious, though he feels and eats well. His temperature is 101° and pulse 56 per minute. No petechia can be detected.

November 9.—Doc has an exaggerated form of purpura hemorrhagica. His legs are swollen, up to his stifle joints; an abundance of petechial spots of a deep red color appear on the lining of the nostrils. Pulse 75; temperature $104\frac{2}{5}$.

November 10.—Joe is improving. Limbs are fully as large but less painful and can walk. Doc's limbs are quite volumi-

nous, hot and sensitive on pressure. His pulse beats 72 per minute and his temperature is 103°. Eats well and appears brighter.

November 12.—Joe is rapidly tending toward recovery; all symptoms are abating. Doc's limbs have attained an enormous size; his sternum, abdomen and sheath are also swollen; his breathing is made audible by a swelling of the alæ of the nose. Appetite is failing; pulse 76, temperature 103°.

November 14.—The swelling of Doc's fore extremities extends half way up the scapula. Numerous vesicles appear upon the skin of his limbs and sheath, which rupture and discharge serum. The swelliug about his nose is diminishing. Breathes easier and eats some. Pulse and temperature are still well elevated.

November 16.—Doc's febrile symptoms are abating; appetite increasing, and swellings less painful though not much reduced.

November 18.—Emaciation is becoming well marked. His appetite is fair and looks more cheerful. The swellings about the scapula have disappeared. Extremities are becoming crusty in various places. His inferior abdominal and thoracic regions are still very large though rather œdematous. The discolorations of the Schneiderian membranes are disappearing. Pulse 66 and temperature $102\frac{3}{5}°$.

November 29.—Have visited Doc at proper intervals up to the present date and contrary to my expectations he has been progressing favorably and bids fair to make an entire recovery.

I shall now give a brief description of the post mortem appearances as noted on two different occasions.

Post mortem examination of the cadavers immediately after being asphyxiated:—October 15 at about 11 a. m. I arrived at the rendering establishment. Although most of the carcasses have been disposed of, their thoracic organs have been preserved. The skin of nearly all the remaining bodies is denuded of hair to a variable extent, due to the caustic effect of the ammonia upon the cuticle. The chief pathological changes in the different cadavers are quite synonymous and confine themselves to the respiratory tract. The Schneiderian membrane, mucous lining of the pharynx, larynx, trachea and bronchial tubes are thickened and

greatly discolored, being of a dark blue hue, and in some places actually black. The connective tissues along the trachea are discolored in patches, presenting a dark blue speckled appearance. Lungs in general are somewhat discolored, but no marked evidence of congestion is observed; they are quite emphysematous and consequently exceedingly light. The vessels in the pia mater appear engorged. The internal layer of the œsophagus is easily detached, and that of the stomach is hyperæmic. The balance of the internal organs show no trace of disease.

October 17.—A post mortem examination of the grey horse Circus is made nine hours after death. He is not much distended with gas. Upon removing the skin covering, the anterior surface of the neck and lateral region of the thorax, an extensive blackish discoloration of the connective and muscular tissues is exposed. This discoloration occurs in isolated and confluent patches. The larynx and pharynx present a greenish black aspect. Mucous lining of trachea and bronchial tubes are of a like color, and thickened. A frothy bloody liquid is found throughout the whole respiratory track; an abundance of it is contained within the middle portion of the lungs, adding considerably to their weight; they are, however, not hepatized. An emphysematous state is apparent at the periphery of the lungs. The visceral and costal pleura is covered with a fibrinous network. A tenacious coating of mucus is adherent to the inner lining of the trachea and bronchi. The mucous coat of the œsophagus and stomach is congested. The exterior of the intestines in various portions bears evidence of inflammation. No further abnormal changes of the internal organs are discovered.

Treatment: The constitutional treatment pursued in these cases has been rather limited. The administration of drugs per orum was not admissible by reason of the intense irritability of the larynx and inflamed condition of the mouth. The slightest excitement induced by handling these patients about the head, gave rise to a coughing spell, therefore the hypodermic method was resorted to at the outset. Round doses of morphia were injected indiscriminately; also rectal injections of warm water were carried out. Nostrils and eyes were cleansed and anointed

with vaseline; later, where the nasal discharges became more purulent, disinfectants were freely used, also fumigations wherever indicated. After the amelioration of the severe cough, and the inflamed condition of the mucous membranes, one-drachm doses of fluid ext. digitalis were administered three times a day. To the complicated cases of purpura hemorrhagica large doses of iodide potassium were resorted to. Tracheotomy, as mentioned above, was performed wherever the indication presented itself.

Most of the condemned horses were disposed of by injecting a strong solution of cyanide potassium into the jugular vein by means of a short aspirator needle and a one-ounce hard-rubber syringe. The needle is inserted into the vein first, to make sure the injection is not subcutaneous; then the contents of the charged syringe are quickly emptied through the needle into the vein toward the heart; the needle is then rapidly withdrawn, and death ensues promptly.

In conclusion, a few remarks concerning a rare sequelæ which befell two patients, Harry and Jim, are of special interest, considering its origin; namely, a permanent emphysema of the lungs in its severest form. Both horses breathe with extreme difficulty, nostrils widely dilated and flanks very active. Neither can endure the least amount of exercise with any degree of comfort, consequently they are absolutely worthless. I may also mention that a trivial imperfection of the cornea of one eye is still perceptible in several horses.

CAUSE OF IMMOBILITY.

TRANSLATED BY PROF. R. S. HUIDEKOPER, M.D., V.S.

SUB-ACUTE INFLAMMATION OF THE BRAIN.

(*Archiv fur wissen. und prak. Thierheilkunde, Berlin*, 1883, 6 *Heft.*)

District Veterinary Surgeon Winckler, of Grafenau, Bavaria, notes that immobility in horses is markedly increasing in South Germany. The disease increases, not only where it already existed, but is appearing in regions where it was not formerly

known. The author says that the cause has been attributed to hot, damp, low stalls, to want of use of the animal, to over-feeding, especially with nitrogenous food, etc. Within recent years the hygienic condition of the stables has been greatly improved and the ground has been tilled deeper and with greater care.

The work-horse, which is almost exclusively the animal affected, now works in winter as well as in summer in South Germany. The disease appears most frequently in January and February and least so in September and October.

Immobility is much more frequently observed in the months of March and April and May, when the horses are hard worked, than in November and December, when they have little to do. In Wurtemburg the disease is called "Kleekrankheit" or "clover disease." The Bavarian veterinary report of 1874 showed that the disease appeared only in lime soils, where the leguminous plants abound. Immobility is not found among the horses in the high Alpine regions, where clover, etc., are not produced.

The author practiced for many years in the Mitterfels district of Bavaria and found the disease almost entirely in the country supplied by streams from limestone districts, and only met with it in rare cases in the valleys and hills free from lime, where the leguminous plants are wanting.

From these circumstances he questioned, what might be the substance contained in the leguminous plants, which caused the disease. Gérard, a Belgian writer, was the first to assert that the leguminosæ caused nervous symptoms. He found that it was not practicable to give a horse more than one pound of horse beans (food containing 17% of nitrogenous matter,) a day. By feeding three pounds a day he produced death from paralysis in 8 horses. Bettenkoffer and Voit had advanced the theory that excessive nitrogenous food caused fermentation of albumen and a pre-disposition to fibrinous exudation, but Winckler denies that the exudation is proportioned to the gravity of the symptoms. He asserts:

1st.—We frequently see horses suffering from sub-acute inflammation of the brain, bruised and wounded: we do not see more exudation in these wounds than in those of sound animals, which would be the case, if a special disposition to exudation existed.

2nd.—Frequently millers' horses are fed exclusively on bran, which contains more than 17% of nitrogenous matter, and yet they are not disposed to the disease.

3rd.—Brewers' horses, feed for months on little hay, almost entirely on malt refuse, are not affected.

4th.—Cattle are subject to the same disease, but with brewers' feed are not affected.

5th.—Experience shows that 90% of the cases occur between the middle of February and the commencement of September, yet the horses eat almost the same amount of the leguminosæ during the other months. The quantitative difference of nitrogenous matter in the food, at the two seasons of the year, is so small that it cannot be considered the cause of the disease.

6th.—The blood receives probably much less of the albumen from leguminous food than is generally supposed. As the hullings are generally boiled, the soluble legumin is mostly washed away.

The Bavarian veterinary report of 1874 claimed a relationship between large crops of the leguminosæ and immobility, but Dr. Winckler's experience is opposed to this. The author has noted for a number of years, that the disease is most frequent when the crops are harvested in rainy seasons. He comes to the following conclusions:

1st.—A special disposition to exudation does not exist in this disease.

2nd.—An excessive quantity of albumen neither causes the disease, nor pre-disposes to it.

It is evident however that the leguminosæ contain a specific poison which causes immobility.

Sippus, Schrymaerkert, Vallada, Schwanefeldt, Biber, Schmidlin and others attributed and ascribed nervous symptoms to the use of hop clover (medicago lupulina) chick vetch (sathyrus cicera) and the other leguminosæ, which produced restlessness, paralysis, roaring, sleepiness, etc., etc.

Dr. Winckler believes that the poison must be developed by heat and moisture, causing fermentation in these plants, which contain an excessive quantity of nitrogenous matter and phos-

phate of lime and magnesia. This fermentation exists more or less when the crops are fresh, and it is at this time that the disease is most frequent. After wet harvest seasons this exists naturally to a greater extent than after dry ones.

Colin made experiments by injecting the ferment of clover, but they were all negative and only showed that peptone was developed in the blood and that this latter lost its power of coagulating. Schmidt Mulheim, however, showed that peptone injected in doses of 0.30 to 0.60 grammes to the killogramme of the animal's weight produced nerve symptoms of a like character to the disease. In immobility we also find a thinness of blood and a lessened coaguability. The symptoms vary somewhat with the leguminosæ used (red clover, vetch, Jamacia cabbage tree, etc.) The colic from clover feeding in the summer is accompanied by severe brain symptoms (vertigo) that are identical with the symptoms produced by Schmidt Mulheims' peptone experiments. Dr. Winckler further traces a relationship between the frequency of the disease and the care taken in harvesting the crops and keeping them free from fermentation.

He acknowledges a predisposition on the part of individual animals, produced by hot stables, want of work, etc., and a predisposition on the part of lymphatic animals, whose loose connective tissue permits of easier serous exudation. The prophylaxis is naturally indicated. Sound proper drying of the leguminous crops and hygienic precautions in the stable and in the use of the animals. Very similar symptoms may be caused by the English ray-grass and other plants, and the author warns against a mistake in diagnosis. For treatment, Dr. Winckler thinks that carbonic acid is indicated, and recommends the use of bicarbonate of soda and tartaric acid.

* * * * * * *

Almost simultaneously with the appearance of this article of Dr Winckler's, Dr. Proust communicates to the "Académie de Médecine" at Paris a paper on "Lathyrisme médullaire spasmodique," observed in North Africa. This disease is frequent after bad crops, when the leguminosæ have been added to the wheat and other grain to make up the requisite amount of flour. Dr.

Proust has collected an extensive historical sketch and describes the same nervous symptoms as those found in Germany, but over a greater number of animals; horses, cattle, sheep, hogs, jackals and even birds are affected. He cites the result of the use of the vetch in the omnibus service at Rouen in 1867 under the veterinary service of M. Verrier. Here a quarter of the horses had the leguminous addition to their food, and promptly developed paralysis, immobility and roaring, which did not exist in the other stables, and ceased on the abandonment of the ration. Dr. Proust concludes that the leguminosæ, containing noxious properties, ought not to be used except within certain limits; that the lesion is a transverse dorsal tabes, sometimes accompanied by congestion and hemorrhage.

CANINE PATHOLOGY.

By Prof. R. H. Harrison, D.V.S.

(*Continued from page* 405.)

Case No. 6.—*Ovarian Tumor.*—This animal, a valuable English setter, three years old, was sent from the country to be mated with a thoroughbred dog in my possession. With her came the history that she had a continual desire for the male, but after repeated coition with several males, fecundation had not taken place. She was in excellent condition, bright and lively, was placed with the dog, and after the usual period, all signs of œstrum ceasing, was returned to her owner, only to be sent back again in rut, after two weeks. At this time again symptoms of œstrum were present, with tumefaction of the vulva, mammæ, and a desire for the male. A careful examination was made, suspecting disease of the ovaries, but nothing abnormal was detected. After all appearance of rut had disappeared the male was placed with her, and refused at first to serve, but after much coaxing on her part, the act was accomplished.

The animal was again sent home, but returned in three weeks with the request to perform ovariotomy, as the owner had no hopes of breeding from her.

The operation was performed in the usual manner, through the linea alba; both ovaries were enlarged, the right the size of an English walnut, and the left of a small apple and weighing three and a half ounces.

These organs were not examined microscopically, but, viewed by a surgeon who has an extensive ovarian practice among women, they were pronounced tuberculous, as they were studded with tubercular nodules, and on section there appeared innumerable small abscesses.

The bitch recovered from the operation within a short time, and it is reported that there has been no appearance of the former trouble.

Since, the animal was accidentally shot. Unfortunately, I was not informed; it would have been of interest to have examined the other organs, and ascertained if tubercular deposits existed elsewhere.

Case No. 7.—*Filaria Immitis.*—This patient, a Scotch terrier, was sent for treatment with the history, that when exercised or excited he would suddenly fall and lie gasping for breath, seemingly in a fit. In coming to the place he had walked about half a mile, and presented great distress in respiration, gasping for breath, the visible mucous membranes being of a livid hue, the pulse 148 to the minute and the heart beating tumultuously against the walls of the chest; the temperature was 100⅗°

After several hours, being kept very quiet, it was observed that the pulse, regular before, was now long, full and compressible, changing in character after the third beat, to quick and wiry, running so rapidly that it could not be counted, giving a similar impression to a hard string drawn rapidly over the finger. In making him assume the upright position the distress manifested before in respiration became quickly apparent, producing passive congestion of the lungs.

A diagnosis of heart disease was made, the lesion thought to be valvular disease with aoartic regurgitation. Quiet and sedatives were ordered, and an unfavorable prognosis given.

During a visit of the owner, the excitement brought about by play and the sight of his master, proved fatal, the respiration be-

coming suddenly laborious, the animal dropping on his side and expiring in a few seconds.

An autopsy made immediately revealed passive congestion of the lungs with heart clot, with hypertrophy of the organ. In the auricle two thread-like white worms, (Fillariæ Immitis), were found, and one in the left ventricle.

Case No. 8.—*Hermaphrodite.*—A half bred black and tan terrier, suffering from obstinate constipation, was left for treatment.

It was upon superficial examination a male, and I was somewhat surprised to observe the animal urinate as a female.

On closer examination the penis and testicles were seemingly well developed; there was present also an imperfect vulva and vaginal cavity, ending as far as could be ascertained, in a cul de-sac; the urethra was normal and in the usual position. In passing a very flexible bougie through the urethra of the penis, an obstruction was reached just over the ischial arch, gentle pressure giving the feel of a saccular ending at the end of the bougie.

The vulva, imperfect in formation, were about one half the normal size, and lay very close to the skin, their presence being only detected by close inspection; the clitoris was absent.

Questioning as regards any venereal appetite, the owner said he had never noticed any, that other dogs would approach, but neither manifest any desire.

Case No. 9.—*Imperforate Anus.—Absence of Rectum.*—This patient, a male hound puppy, ten days old, was brought to the infirmary, the owner stating that a few days after birth the pup would vomit after nursing, and at times noticed that the vomit contained what had the odor of fœcal matter.

The animal was emaciated and very weak, and on examination no anus was present, its usual place being occupied by a slight depression. On manipulation of the abdomen, the rectum was apparently empty, while the colon seemed well filled with ingesta. The division between the two was sharply defined.

An operation was performed to create a artificial anus, by making a crucial incision over the depression, through the skin, entering the pelvic cavity; the little finger was introduced but no

rectum could be discovered, and on manipulating the abdomen, the apparent division between rectum and colon remarked before, seemed to be the colon ending in a blunt point just outside the pelvic cavity.

The animal was destroyed and an autopsy confirmed the result of the examination, the colon ending in a blunt point, free and floating in the peritorneal cavity. Its contents were hardened, and the mucous membrane was softened and detached throughout.

The stomach was empty, and was highly congested, and had lost its saccular appearance to a marked degree, resembling more a cylinder.

Would it be reasonable or judicious in a valuable puppy, to attempt to stretch out the colon, and let it occupy the position of the rectum? In a similar case, this experiment would have been attempted if the strength of the patient had been sufficient to warrant it.

Case No. 10.—*Traumatic Salivary Fistula.*—A half grown bull dog had suffered from an abscess on his cheek, which was opened by his owner, and had continued to discharge for over two months.

When first seen there was a small fistulous opening, constantly discharging saliva. It was situated at the seat of the upper molar gland, which it will be remembered is placed under the zygomatic crest, forming a lobe near the eye, and emptying by a single duct above the last molar tooth. The opening of the abscess, which was carelessly made, had opened the duct, and the fistula was the result.

A very small probe introduced through the fistulous opening reached the buccal cavity without difficulty.

The treatment consisted first, in a suture closing the opening, but proved a failure; next, scarification of the edges was attempted, keeping the parts covered with collodion, but after a fair trial was given up. Caustics of various kinds, including the Egyptiacum ointment, were used, but failed to accomplish the end. Success was finally attained by the use of the actual cautery. The platinum point was used, heated to whiteness, and introduced superficially. Two days afterwards the opening had closed and remained so permanently.

CASE No. 11.—*Cæsarean Section.*—An English setter, primipara, was attended in difficult parturition. She had been in labor twenty-four hours, and had born two puppies. On examination a third fœtus was found wedged in the inlet of the pelvis, dorso-lumbar presentation. It was pushed back and extracted without difficulty, by forceps, two other fœtuses being made out in the left cornua.

The animal was left for the night, thinking that nature would accomplish the rest, as the strength of the mother was good, and much relief had been afforded by removing the fœtus. The next morning found the animal straining violently, weaker, with a fœtid discharge from the vulva, the position of the fœtuses being the same as the night before.

As the fœtuses were so far away, and the forceps of no avail, it was decided to operate.

She was etherised and an incision made through the left flank. The uterus was brought to the opening, and an incision made as high up as possible, and the dead fœtus together with their membranes removed. The cornua was dressed antiseptically and the external opening closed by quill sutures and a thick layer of collodion.

After twenty-four hours, she began to nurse her two puppies, and had quite recovered from the operation and ether.

The wound did very well, healing by first intention in its upper two-thirds, and by granulation in the remainder, within a short time.

A similar operation was performed on a small Skye terrier, which was in pup by a full sized pug. Parturition was rendered impossible by the size of the fœtal head. The operation was performed early, and the lives of both mother and offspring were saved.

In cases where the operation is indicated it is best to operate as soon as possible, for later on the strength of the mother is weakened, and the lives of the young are endangered.

The operation should be performed through the flank, as the incision through the linea alba interferes with the function of the mammary glands; besides, the wound does not heal as kindly, for at this period the mammæ are more or less swollen and congested.

PHYMOSIS.

A CONDENSATION AND TRANSLATION FROM THE "HANDBUCK DER CHIRURGIE," BY C. H. HERTWIG.

By A. J. MURRAY, M.R.C.V.S.

No description of this condition is given in the only existing English work on veterinary surgery, and even in the recent excellent French work of Peuch and Toussaint it is omitted. As Hertwig, however, has not only described phymosis, but the diseased states which sometimes precede and lead up to it, I will place his remarks on the subject before the readers of THE REVIEW.

When the sheath (prepuce) is contracted in front of the penis, so that it cannot be drawn out of the sheath, the condition is termed phymosis. Phymosis generally arises from an inflammatory exudation and thickening of the skin at the anterior portion of the sheath; it may be caused by blows, kicks, wounds, etc. It may be recognized by the fact that the animal does not draw his yard out of his sheath, but urinates in his sheath; in consequence of this there is sometimes a fluctuating swelling of the sheath, which by-and-by disappears, through the continual dripping of urine from that part. If an examination is made, it will be found that the entrance to the sheath is very much narrower than usual, and that the skin is thickened, drawn together, and indurated.

When phymosis is of recent date it may be treated by means of poultices and demulcent and anodyne solutions, by solutions of potash, or by the use of mercurial or iodine ointment. Sometimes by pushing a sponge into the entrance of the sheath the diameter of that part may be gradually widened. Should the treatment recommended, however, prove unsuccessful, or should the diseased state of the sheath be of old standing, and be found to arise from a swollen and indurated state of the skin and cellular tissue, or from the presence of warts or other diseased growths of old standing, the under surface of the sheath must be divided longitudinally up to the seat of contraction, so as to enable the penis to be drawn out of the sheath and the urine to be discharged in the natural manner. The operation should be performed with

a probe-pointed bistoury and a director, which should be passed between the penis and the lower surface of the sheath. Hertwig says in performing this operation it is not necessary to cast animals of a quiet disposition. He also advises the removal of any diseased formations which may be present in the sheath, and that the lips of the wound should be treated so as to prevent adhesion.

He also describes, at considerable length, "inflammation of the sheath," which throws considerable light on the pathology of phymosis, and enables his readers to form a better conception of the nature of that disease.

EDITORIAL.

STATE VETERINARY SOCIETIES.

We have often called the attention of our readers and that of the veterinary profession in the United States to the necessity which presented itself of coming together and organizing State Veterinary Societies. We have done so, because we were satisfied that by the formation of these regular bodies, a great deal of harmony and good feeling could be established between the practitioners of each State; a beneficial exchange of thoughts could be secured by the discussions which would take place at the meetings; and because we thought they would form the nuclei, which, gathered together, would serve to establish a National Association which would properly represent the veterinary profession of America.

It has been with that thought in view that we have gladly mentioned and carefully watched the movement which has been started in the western part of the country, and which we have urged ought to be followed in the Eastern States. We had hoped that those societies which were already formed in Michigan, Ohio, Illinois, &c., were constituted as every good lover of the profession would wish them to be, and we never expected that the organization and the carrying on of these societies could be otherwise than strictly professional. Were we in error? It is for the veterinarians of those States, and who belong to those societies, to let the profession know. It is to be regretted that so far as the Excelsior

State is concerned, the steps which were taken in October last, and to which we have already alluded, have proved far from giving evidence as to the correctness of our supposition. It is to avoid the repetition of similar action that we recommend again to the veterinarians of the States where no organization is yet in existence, to lose no time in taking the proper steps to unite themselves into professional bodies.

There are now in many States—in Massachusetts, New Jersey, Connecticut, Rhode Island, Maine, and perhaps several others—a sufficient number of regular graduates of various schools to form these associations. They should do so at as early date as possible. They should have their constitution and by-laws, and make them as liberal as they can be made. They will find in their districts gentlemen practising veterinary medicine, self-made men, who deserve much credit for what they have done, though deprived of the opportunity of obtaining a college education. These men cannot be ignored. They in many instances are far superior to the regular graduates in professional knowledge and in ethical conduct, and recognition ought to be granted them. A licentiate degree could be given to those of them who could fulfil certain requirements. The Americans have taken much from their English cousins. In following the example set by the Royal College of Veterinary Surgeons in England, American veterinarians would not be following one of the worst ways of English people.

Those societies once formed, a National Association could readily be organized. Already a large nucleus for such an organixation exists. Formed years ago, it is in a flourishing condition. The treasurer reports annually an increase in the capital entrusted to his care; for twenty years she has held her meetings regularly, and many interesting subjects have been discussed; she is known all over the world, though a few at home may claim ignorance of her existence. It will be to the United States Veterinary Medical Association that these State societies will naturally attach themselves.

The next meeting of that Association is to be held, we understand, in Cincinnati, in March. No doubt many veterinarians of the East will go there to meet their colleagues of the West, and

we feel confident that the delegates of the State societies of New York, Massachusetts, Pennsylvania, New Jersey, Connecticut and Rhode Island will, with others, meet in the great metropolis of Ohio, those of Wisconsin, Illinois, Iowa, Michigan and Ohio.

Let us all work harmoniously in this movement; let us do it not in the interest of one, nor in that of a few, but for the benefit of all; for the advancement and elevation of the veterinary profession of America; for the destruction of the vampire of veterinary science—the crushing of quackery, either clad with the garment of a diploma—which the holder dishonors—or covered with the mantle of ignorance and charlatanism.

NOTICE.

Will any of our readers who may know the present address of John Bretherton, M.R.C.V.S., late of the 7th United States Cavalry at St. Paul, Minn., please communicate with the Editor.

REPORTS OF CASES.

RUMENOTOMY.

By C. H. Peabody, D.V.S.

Nov. 15, 1882, I was called four miles into the country to a cow on the farm of Mr. L. M. Blodget, where I found a full-blooded Ayrshire cow suffering from plenalvia. The history of the case was that the cow had been unwell for a few days, neither eating nor ruminating. I decided to operate at once. At this time the pulse was 72; respiration 28, and very labored; visible mucous membranes of a bluish-leady hue; temperature 104⅘°. Having secured the animal with the off side to a partition, with my assistant, I proceeded to operate as follows: First clipping the hair from the nigh side, I made a vertical incision through the skin from above downwards for about 8 inches, in the left hypochondriac region. After stopping all hemorrhage, and using a carbolic solution, I separated the muscular tissue by dividing it in the direction of the fibers, and holding it apart by flattened hooks of bent steel, about one inch in width and rounded

at the point. After separating the muscles and stopping all hemorrhage, which was very little, I opened the abdominal cavity by cutting through the peritoneum in an oblique direction, corresponding to the fibers of the transverse muscle of the abdomen, exposing the rumen, pulled a portion of the rumen through the opening, and making a small incision through the walls of the rumen, allowed some gas to escape. I then separated the walls of the rumen by cutting with the scissors freely enough to admit my hand, being careful to place a towel wet with a weak carbolic solution between the muscles and rumen and (by putting the cut edges well out it was hardly possible for anything to get into the abdominal cavity), I removed seven pecks of dry hay, chaff straw and corn stalks. I then, through the opening in the rumen, turned an injection made of

℞ Magnesia Sulphate, Sodium Chloride. a.a. ℥ iv.
Aqua (quite warm) O vi.

Quite a lot of feed was left in the rumen. After cleaning the edges of the wound thoroughly, the wound was sewed with a continuous carbolised cat-gut suture, turning the edges in and bringing the peritoneal coats of the rumen well together. After it was well sewed I dropped it into the abdominal cavity, sponging what little hemorrhage was visible with a weak and warm solution of carbolic acid. Then bringing the peritoneum together with carbolised cat-gut sutures, I let go of the muscular tissue and it closed the opening completely. No sutures were used through the muscular tissue. I closed the skin with a quill suture of four pieces of tape. Treatment:

℞ Tinct. Opium ℥ vi.
Spts. Juniper O j.

M. S. Give 2 ℥ of mixture every two hours and warm sloppy drinks if patient will drink them.

Cover the wound with a compress wet with carbolic solution.

Nov. 16th. Pulse 60, respiration 20, temperature 103°; looks well, drinks freely of warm drinks; fœces quite hard. Same treatment, every three hours.

Nov. 17th. Pulse 65; respiration 22; temperature 103⅕°; appears dull. Gave

℞ Sps. Juniper ℥ ii.
Tinc. Gentian Co. ʒ iv.
Tinc. Capsicum m xx.
Sps. Amon. Aromat ʒ i.

M. S. Give every three hours.

Nov. 18th. Wound looks well; pulse 60; respiration 18; temperature 101°; fœces soft; looks bright; drinks well; same treatment every six hours; gave a few boiled roots and hay.

Nov. 20th. Pulse 62; respiration 16; temperature 101°; hay and gentle medicine twice a day.

Nov. 22nd. Pulse, respiration and temperature about normal. Edges of wound look well; not much suppuration. Dress with chloride zinc solution. Order it kept clean; remove two sutures; no treatment; feed light.

Nov. 27th. Looks well. Temperature, pulse and respiration not taken; wound looks fine. Dress with chloride zinc solution. Remove all the sutures.

Dec. 7th. Wound all healed; turned loose into yard.

Jan. 22nd, 1883. Saw the cow to-day and she has had, this morning, a good full sized heifer calf alive.

Providence, Jan. 25th, 1883.

EXTRACTS FROM FOREIGN JOURNALS.

RIGHT STRANGULATED HERNIA—TETANUS TWENTY-FOUR DAYS AFTER THE OPERATION—RECOVERY.

By M. Palat.

A stallion, 11 years old, is taken with a violent colic. The animal presents a hard, painful tumor in the right inguinal region. Every few moments he drops on his hind quarters, the hocks are flexed, and the animal needs punishment to prevent his lying down. He is operated upon at 11 o'clock in the evening. Thrown on the left side, the right leg put is put in position as for castration, a long incision is made in the hernial tumor, until by careful handling of the instrument the vaginal sac is opened toward the posterior extremity of the testicle. An escape of serosity takes place and the small intestines appear of grey-reddish

color. The inguinal sac is freely open and the index finger introduced into the canal discovers a strong strangulation, which renders it very difficult to pass the extremity of the finger into the *neck* of the sac. A blunt bistoury is then introduced flatwise along the finger, and when at the place of strangulation, the division is made by a turn of the instrument with the sharp edge. The division is again carried upon another part of the strangulation, to facilitate the reduction, which is effected with the hand carefully oiled. A clam is placed as high as possible, and the animal allowed to get up. The next day, as the parts are considerably swollen, the animal is thrown down again and the parts well cleaned with carbolized water. Five days after this the clam sloughs off, and from that day every thing is doing well. About two weeks later a large abscess is found and opened in the right groin. Three days after there is a slight rise of temperature—some drafts in the stable are considered as dangerous and are carefully closed up.

The next day, the twenty-fourth after the operation, the symptoms of tetanus are well marked. The treatment consists in a pint of spirits of turpentine mixed with white of eggs. This is given in two doses with linseed tea and honey. Another pint is given by rectal injection, in small quantities repeated. The body is heavily wrapped with blankets, and the animal placed loose in a dark box. The next day the animal is worse. About two ounces of laudanam are given one-half per mouth with a syringe, the other per rectum. Fumigation with ether, and wound dressed with tincture of opium. This treatment is continued with variations of more or less improvement in the symptoms, until the thirty-fifth day, when he is discharged.—*Recueil de Medecine Veterinaire.*

NEW TREATMENT OF QUARTER CRACKS.

By M. Cousin.

By this new and simple mode of operation, the author claims to have some important points, in the advantages obtained by his process. Applicable to all simple solutions of continuity, that is, when there is no disease of the laminæ or of the bone, it is said

to require not *one day of rest*, and that nine times out of ten the cure is obtained by a simple operation, consisting of a *transversal* groove towards the upper third of the hoof—nothing more. This groove is made with the drawing knife, right across the crack (quarter, toe or sand crack), about one inch long and half an inch wide (or three centimeters long and one wide). It is made down to the keraphyllous structure, which may also require to be divided. It is suggested that other simple surgical means which may present themselves in the case must not be neglected. Hoof ointments are recommended, but baths are objectionable. Sawdust bedding for the fore feet is advantageous.—*Recueil de Medecine Veterinaire.*

PATHOLOGICAL PHYSIOLOGY.

UPON THE CULTURE OF THE MICROBE OF GLANDERS AND UPON THE TRANSMISSION OF THE DISEASE BY THE LIQUIDS OF CULTURE.

By Messrs. Bouchard, Capitan and Charrier.*

The great and important theory which defines contagion as a "function of a living element," under whatsoever form it may be manifested, as well in the vegetable as the animal kingdom, has received fresh and powerful confirmation from the researches into the nature of glanders as reported by Professor Bouchard, and his collaborators, Messrs. Capitan and Charrier, in a communication forwarded by them through Professor Brouardel before the Academy of Medicine on the 27th of December last.

Indeed, it is there conclusively demonstrated that glanders must from the present time, and without further question, hold its place in the category of microbian diseases. Its microbe has been seen, isolated, cultivated in its proper media, and recognized as an active virulent element, after a series of successive cultures, the virulent matter having been taken directly from the lesions proper to glanders, and inoculated by natural methods into susceptible organisms.

The proof is complete. The microbe *alone*, freed from all

* Report of Mr. Bouley before the Academy of Medicine of Paris.

organic mixture by successive cultures, which purify and segregate it, and allow the observer to *see* it alone, at its work in the organization where it is introduced; this microbe alone gives rise to the manifestations of glanders, characterized by all its symptoms and lesions, with as much certainty as when the disease proceeds from the virulent matter inoculated in its natural state.

Here there is a new advance into the domain of microby, this new world, where many discoveries are yet in reserve, waiting for those explorers who, provided with all the necessary means, have devoted themselves to the researches rendered so delicate and difficult by the excessive smallness of the beings whose existence is to be observed and their proportions recognized.

Before proceeding further, we desire to improve this occasion to recall the large share of credit which belongs to Prof. Chauveau of Lyons, for aiding in the solution of the problem of the "intimate nature of virulency." Every one remembers the ingenious experiments by which he elucidated the theory. Borrowing from Spallanzani the method of dilution by which that great physiologist demonstrated the agency of spermatozoids in the spermatic secretion, Mr. Cheaveau has shown that a dilution would act in the same manner for virulent elements as for the sperm, viz., that they reduced their ability in proportion to their extent, and that in both cases it, so to speak, rendered it aleatory; the chances of manifestation of this ability being conditioned on the presence of the living particles in the drop of tested dilution, spermatozoid in one, and in the other the corpuscle proceeding from the virulent matter.

Mr. Chauveau did not remain satisfied with this first mode of demonstration. He had recourse to the method of *diffusion* to prove that, in virulent matters, the activity proper was inherent, not in the liquid substance susceptible of diffusion, but in the solid particles which remain at the bottoms of vases, and which the motion of diffusion failed to carry. Again, he has made as complete as possible the demonstration that the figurative corpuscles of virulent liquids *alone* possess the specific properties of those liquids, by showing that, even after five successive washings, in a large quantity of liquid, these corpuscular elements are the

true agents of virulency, so long as their inoculation in susceptible organisms gives rise to the manifestation of the disease from which they proceed, with just as much certainty as the inoculation of the natural virulent matter.

Nothing can be more demonstrative than these experiments. They prove, in a general way, the existence of *virulent semence*, constituted by isoluble corpuscles, which are the necessary agencies of contagion.

These admirable discoveries constitute an important epoch in the general history of virulency, since from them have proceeded the first positive conceptions of the nature of the contagious elements in diseases not acknowledged as parasitical. Before their development, the reign of uncertainty and obscurity was complete. In their presence, light began to be thrown upon the phenomena of contagion, which had hitherto stood upon a mere basis of hypothesis. Mr. Chauveau would, no doubt, have made still further progress had not his mind been preoccupied and dominated by the idea that between contagious diseases, properly so called, and those in which the virulent element was constituted by a parasite, the distinction was absolute, and that they belonged each to a category essentially foreign to the other.

It is this idea which deterred him from experimenting with the cultivation of these corpuscles, and demonstrating with his admirable sagacity the inherency of virulent activity, to the exclusion of the solid or liquid organic matters with which these corpuscles might be associated.

This division, which seemed to be well established when Mr. Chauveau made his experiments, has since, and by Mr. Chauveau himself, been recognized as an erroneous expression of the real nature of the facts.

As our knowledge progresses and our researches are multiplied, new facts appear to convince us that the phenomena of contagion are determined by one converging law in both living kingdoms, and whatever may be the species of disease, whether of animal or vegetable organisms, the rule is invariable that wherever there is contagion it proceeds from a living agent, which is the necessary factor in the case.

When the living element of a contagion of a large size pre-

sents itself, the acarus of scabies for instance, which we take as a type, in this point of view, the *consensus* is unanimous; there is no more room for doubt; but it is no longer so when the question is one of microbes and of their action, as instruments of contagion and as causes of the numerous lesions peculiar to each species of contagious disease.

Many are not yet prepared to admit this conception, simple as it is, and which so thoroughly explains so many facts, and it thus becomes necessary to insist on the demonstrations which belong to this great question of general pathology. The last researches of Messrs. Bouchard, Capitan and Charrier give us this opportunity, and we shall now see how the discovery of the microbian nature of glanders will enlighten the evolution of the lesions which characterize it and that of the symptoms correlative to it.

But, first, how did those gentlemen recognize and establish the fact that there is a microbe in glanders, and that it determines the disease in a manner so unquestionable, and gives it its essential character?

On this point, all the elements of proof must be placed before the Academy, so that there can be no further hesitation in admitting the evidence of the fact.

The researches of Mr. Bouchard and his assistants go back to November, 1881. From that time forward they have been making cultures of the matter taken from an abcess opened on a mare whose farcinous case was reported in the thesis of Mr. Clement in 1881.

The liquid of the second culture of this matter, inoculated to three guinea-pigs, produced in two of them, after twenty to twenty-four days, a fatal disease, characterized by pulmonary and ganglionic lesions, resembling very much those of glanders. The third guinea-pig that was killed presented the same lesions. With the matter taken from one of its glands, Mr. Arloing, of Lyons, inoculated a donkey, upon which the inoculation seemed to be negative. When killed three months later, however, this animal exhibited the pulmonary lesions characteristic of chronic glanders.

In July, 1882, these experiments were renewed with pus from a glandered horse.

The 4th of that month, a culture was made in a vase with a

piece of a nasal ulcer taken from a horse just killed, and another with a small piece of tuberculous spleen. The next day a small quantity of these first cultures was taken by Mr. Arloing, who on the 10th of July inoculated with it two donkeys.

On the 19th, the one that had been inoculated with the culture of the nasal ulcer died, and on the post mortem exhibited the very characteristic lesions of glanders in the respiratory and reproductive organs.

On the 28th of July, eighteen days after the inoculation, the other died. No tubercles appeared in the lungs, but ulcerative lesions were present in the first respiratory and digestive apparatuses.

These facts were, however, nor accepted by the gentlemen as sufficiently positive, because the inoculation had been made with the liquids of first and second cultures, in which it might be supposed the microbes were not entirely free from other particles contained in the matter they had used.

According to Mr. Bouchard and his assistants, it is only the fifth culture that can be considered as pure; that is, as composed entirely of microbes of new generations. Their statement is based upon this principle:

They say that "if it is considered that successive cultures are made by adding to the bouillon (the liquid of culture) about one-thousandth part of the preceding culture, that in some virulent liquids the microbes are so closely pressed and so small, that each milligram may contain one thousand millions of them, it will be understood that, considering only the microbes already existing in the liquid which serves for the first semination, there may be for each cubic centimeter of bouillon of the first culture one thousand millions of microbes coming directly from the diseased animal; one million in the second, one thousand in the third, and one in the fourth; while for the fifth their remain nine hundred and ninety-nine chances in a thousand that only one microb of direct origin will be found."

The fifth culture only giving guarantees that its virulent properties proceed from microbes of new generations, it is with these liquids of the fifth culture that Mr. Bouchard and his

assistants made the inoculations recorded in their paper. On the 11th of August, 1882, a large cat was inoculated with the liquid of the fifth culture, obtained from the nasal ulcer of the horse killed on the 4th of July. This cat died the 5th of September, with a suppurative tumor of the left testicle and of the inguinal glands. On the 5th of September another cat was inoculated with a piece of a gland of the cat which died on the 21st of that month, with a chancre at the point of inoculation, tumefaction of the inguinal glands, and miliary abscesses in the lungs.

On the 21st of September a third small cat was inoculated with pieces of gland from the second. Death occurred on the 28th, with a chancre at the point of inoculation, nasal ulcers perforating the septum, subperiostic abcesses of the nose, pulmonary abcesses, and tumefaction of the axillary ganglions.

On the 27th of September, while this last cat was yet alive, a little bloody serosity taken from its nasal swelling was used in inoculating a guinea-pig; he died on the 28th of October, thirty-one days after inoculation, with a chancre at the inoculated spot, a swelling of the inguinal glands of the same side, and pulmonary abscesses, surrounded by a hemorrhagic areola.

On the 1st of November, 1882, Mr. Arloing, with the pus of a pulmonary abscess of this guinea-pig, inoculated a donkey, which died on the 11th, ten days after inoculation. His lungs were filled with the nodules of acute glanders.

(*To be continued.*)

CHICAGO CONVENTION OF STOCKMEN.

(*Comptes Rendues.—From the National Live Stock Journal.*)

Last September, Dr. Loring, Commissioner of Agriculture, was induced by a resident of the central portion of this State to call a convention of those interested in live stock matters, to meet in this city during the week of the Fat Stock Show. There has been a great deal of criticism of the course pursued by our Government in relation to contagious diseases of live-stock. Since the appointment of the Treasury Cattle Commission, the restrictions on our live-stock landed in Great Britain have been made

more stringent and the management of our quarantine stations has been such as to cause them to be regarded by many as an imposition and a farce. Some were of the opinion that the convention was called principally in the interest of the Commission and the veterinarians employed by the Government.

As will be seen by the following report, which want of space compels us to curtail somewhat, there was not entire harmony in the views of those who took part in the debate as to the best course to be pursued, but it was agreed that the National Government ought, through competent persons, to take prompt and effective steps to stamp out contagious diseases, especially among the cattle of this country.

The meetings were held on Thursday and Friday, Nov. 15th and 16th, a large number of those in attendance at the Fat-Stock Show and public sales that week being present.

At half-past ten o'clock Thursday morning, Prof. G. E. Morrow called the meeting to order, and read a letter from Commissioner Loring, expressing his regret that owing to illness he was not able to be present.

The roll-call of States and Territories was then proceeded with, after which, on motion, Prof. Morrow was chosen to act as temporary Chairman, and L. S. Coffin selected as Secretary.

Committies on permanent organization and on order of business were appointed.

Mr. John Dunne, British Vice-Consul at Chicago, by request of his Government, attended the convention, and was accorded the privilege of participating in any discussion.

Gov. Hamilton, of Illinois, was introduced, and addressed the meeting on the subject of contagious diseases in this State. He spoke of the action taken by the Legislature in reference to the glanders, the result of which was, that the spread of this disease had been checked. He urged the importance of some effective action being taken by the General Government to protect the live-stock of the country from contagious diseases, and, in closing, expressed the hope that this meeting would be productive of good results.

Hon. J. B. Grinnell, of Iowa, said he would like to hear from

some of those present as to whether disease actually existed among their cattle, and, if so, to what extent.

Mr. R. D. Kellog, of Iowa, said he thought the cry of "fire" was raised too frequently; in fact, when not even smoke was visible. He was of the opinion that the cry of disease, now heard in many parts of this country, and also sent across the water, was calculated to do much damage to the live-stock interests of America. The cry about hog cholera and kindred diseases was simply a cry about things of the past. With the exception of glanders among horses, he was not aware of the existence of any contagious disease among stock.

Mr. W. B. Parsons, of Ohio, stated to the convention that although he had traveled quite extensively through the cattle-raising districts, both in the Eastern and Western States, he had not heard of any contagious disease among stock. There were a few cases of death among weak calves, produced by cold or lung trouble, but such sickness should not be designated as pleuro-pneumonia.

Dr. Prentis, of Illinois, indorsed the remarks made by the previous speaker. In reply to a question asked by one of the gentlemen present, he stated that up to the present time he had not known of the existence of one case of genuine pleuro-pneumonia among the cattle of this country.

Mr. J. Clark, of Iowa, said he did not know of any man in his State who anticipated trouble from pleuro-pneumonia. Contagious disease had never found its way into any of the stock raised in Iowa. He had been in England recently, and could bear testimony to the fact that the American shippers suffered much loss by the erroneous belief on the other side of the ocean that our cattle were diseased.

Mr. L. S. Coffin, of Iowa, said he heartily agreed with Mr. Clark on some points, but differed with him on others. So far, Iowa was free from disease, but how long might it remain so? So long as disease existed in any part of the country, no one State could feel absolutely safe; danger existed, and would continue to exist until every vestige of the disease was eradicated.

Dr. Gadsden, of Pennsylvania, maintained that the English

people were fully aware of the fact that disease existed among our cattle. They had agents in many parts of this country, who kept them thoroughly posted on the condition of our cattle.

The report of the committee on permanent organization was then submitted. They recommended for President, J. S. Williams, of Kentucky; Vice-Presidents, G. E. Morrow, of Illinois, Alfred Butters, of Colorado, Edward A. Powell, of New York, and M. H. Cochrane, of Canada; Secretary, Thomas Sturgis, of Wyoming; Assistant-Secretary, Edward B. Emory, of Maryland. The report was adopted.

Senator Williams, on taking the chair, thanked the meeting for the honor it had conferred on him. He said he had endeavored to procure some legislation on the subject of contagious diseases among stock, but he had found that members of Congress knew but little about the matter. He referred to the very large amount invested in cattle, and urged the great importance of some action being taken by the General Government that would entirely stamp out contagious diseases among the cattle in every part of this country. By this means alone could the British Government be convinced that it was safe to admit our stock. Once accomplish this, and our foreign trade would be very largely increased.

Mr. Thomas Sturgis, of Wyoming, who had been chosen Secretary, said that, above all things else, the success of Wyoming depended on the cattle-raising industry, and in view of this, action had been taken to prevent the bringing in of any diseased stock. No cattle could be taken into the State, except with the approval of the Territorial Veterinarian. It was evident, from the report of the Commissioner of Agriculture, Dr. Loring, that disease existed in some portions of the Eastern States, and it was very important that steps should be taken not only to prevent its spread, but to stamp it out entirely.

Prof. Law read a lengthy paper entitled "Contagious Diseases of Animals, and the Means of Suppressing and Extinguishing them." In this he referred to Texas fever, pleuro-pneumonia, tuberculosis, glanders, and other diseases known to exist in different sections of the country, and closed by saying, "the only

sound and just method of dealing with the disease must be directed and sustained by the National Government."

When he had finished reading his paper the meeting adjourned until 5 o'clock.

AFTERNOON SESSION.

Upon reassembling, a committee on resolutions was appointed, after which Dr. Salmon, one of the veterinarians of the Agricultural Department, read a paper on "The Prevention of Contagious Diseases of Animals in America." He said, no case of pleuro-pneumonia had been found west of the Allegheny Mountains, and that with the exception of a few cases in Connecticut, Pennsylvania and New Jersey, none could be found except in the neighborhood of New York, Brooklyn, Newark, Baltimore and Washington. He did not think it would be a great task to free the country from this disease.

The present Secretary of the Treasury Cattle Commission made the surprising assertion for him, that there had been much idle talk about pleuro-pneumonia, that no cases of foot or mouth disease had ever existed among American cattle, and that the shipping of eastern calves west was a great source of danger, but the business was not profitable aud was dying out.

Mr. Bartlett answered, that he had handled 200,000 of those calves during the last four years, and had found no traces of contagious disease among them, and Prof. Law corrected the statement in reference to foot and mouth disease by saying, that while it had never originated among our cattle, some cases had been found among imported animals.

Dr. J. D. Hopkins, veterinarian for Wyoming, read a paper on "Pleuro-pneumonia," and urged that if Congress could not devise some plan by which the disease could be entirely stamped out, that means should at once be adopted to prevent its spreading beyond its present limits. He claimed that safety was to be secured only by National legislation that would place the matter in competent hands, and urged the importance of each State having a veterinary department.

A recess was then taken till 9 o'clock, P. M.

EVENING SESSION.

On the Convention being called to order, Dr. J. W. Gadsden, of Philadelphia, read a paper on "Contagious Diseases in Cattle; How they are Imported and What they Cost." The three diseases named were rinderpest, pleuro-pneumonia, and foot and mouth disease, the former never known here, and the others traceable to imported stock. To have effect action must be taken by the National Government, and not left to local authorities. He added that there was no quarantine enforced at Philadelphia, and cattle landed there were taken into the country by their owners. Prof. Law replied that the Treasury Cattle Commission was not aware of this, and were not responsible, as the regulations were that no cattle should be landed except at points where preparations had been made for quarantining stock.

Mr. L. S. Coffin said that the Convention should take such action as would secure protection from further danger of bringing disease by importations. Considerable discussion followed, after which several members were added to the committee on resolutions, and the convention adjourned, to meet at 8 o'clock the next morning.

FRIDAY MORNING.

The convention being called to order, the Chairman announced that the reading of the resolutions would be the first business, and, on motion, it was agreed that they should be read and acted upon separately.

RESOLUTIONS.

Whereas, The existence of disease among the domestic animals in the United States has seriously affected the exportation of live stock, the suspicion that attaches in foreign countries to all neat cattle and swine of the United States on account of the existence of diseases in certain localities has greatly lessened the sale of American meats in foreign markets; and

Whereas, The existence of pleuro-pneumonia in certain of the Atlantic States, introduced from time to time by the importation of live stock from European countries, constantly threatens the spread of the contagion to the Southern and Western States and Territories; that the disease is of such a character that State

legislation can only give a partial relief; that prompt and appropriate legislation on the part of Congress to eradicate the disease in the infected districts is imperatively demanded; that should the great ranges of the West become infected with the disease, it would be impossible to stamp out the plague, except by the total destruction of the herds, and at a cost of hundreds of millions of dollars; therefore,

Prof. J. P. Roberts, of New York, suggested that the words "certain of the Atlantic States," in the above, be changed to read, "certain portions of a few of the Atlantic States," which would be correct, and have a better effect.

Mr. Emory, of Maryland.—It is almost impossible for us to say to what extent the disease exists, as it is one that fluctuates. I do not think there is a case in Baltimore at present. The last case of pleuro-pneumonia that we had came from West Virginia.

Prof. Law.—With reference to the remark just made by Mr. Emory, I will say that I am as confident as I am of my own existence that disease does exist in Baltimore, and an inspection of the place will prove my assertion. Maryland has not been inspected.

Mr. Emory.—We have a State Veterinarian in Maryland, and he makes very careful examinations.

Prof. Morrow.—If we specify the States in which disease is supposed to exist, we will get into an interminable debate. I would therefore move that the words, "a small portion of a few of the Atlantic States," be inserted in the preamble, as a substitute to what now appears.

Mr. Emory.—It is not fair to say that Maryland is an infected State at present. Our State Veterinarian makes an examination of the stock yards at Baltimore daily, and he says we are free from disease.

Prof. Law.—How many head of cattle enter your stock yards each day?

Mr. Emory.—Perhaps several thousand. It is a great stock centre.

Prof. Law.—And your State Veterinarian *examines* all of them?

Mr. Emory.—Well, he passes through the stalls, and he is

more in favor of killing an animal than retaining doubtful cases on hand.

Prof. Morrow's amendment to the preamble was then put and carried.

The first resolution offered for adoption was as follows:

Resolved, That we urge upon the proper authorities the importance of a thorough inspection of all live stock and meat products shipped to foreign countries.

Prof. Law was opposed to the adoption of the foregoing. He said: I think we are asking too much. I move that this resolution be stricken out, as it favors an unnecessary expenditure, and can do no practical good. Texas fever will remain latent in the system for a month, without the knowledge of any person.

Col. Scott, of Iowa.—I would be in favor of striking it out, as we have not met here for the purpose of protecting the rights of other countries. What we want to do is to protect ourselves.

Mr. Grinnell.—I hope we will sustain the resolution as reported by the committee. I think it covers the ground. There is a cloud upon us, and we propose to remove that cloud. I hope that we will let this resolution stand, and adopt it as it has been sent to us.

After some further remarks, the resolution was put to the meeting. The vote was so close that the Chairman was unable to give a decision as to what the result had been. He therefore called for a show of hands, with the following result: For the adoption of the resolution, 25; against it, 27. The resolution was lost.

The second resolution offered for consideration was as follows:

Resolved, That this Convention heartily endorses the action of the Secretary of the Treasury in enforcing quarantine against all imported cattle, for the purpose of preventing the further importation of foreign contagious diseases; and we recommend that the regulations be enforced, with rigid impartiality, against all importers; and, further, that Congress should be asked to confer authority upon the Treasury Department to quarantine imported sheep, swine, and goats.

Prof. Law said: I am opposed to the adoption of this resolu-

tion on a basis similar to that of the last. To carry out its provisions would require a considerable sum of money. Sheep and swine are examined on landing, and that is sufficient. This would simply incur the expenditure of a large amount of money, without getting any adequate compensation therefor. I therefore move that the part of it relating to sheep and swine be stricken out.

Prof. Law's amendment was lost, and the resolution, as above, was put and carried.

The next resolution was as follows:

Resolved, That we recommend that, for the purpose of reaching definite and conclusive action, a committee of five be appointed by the Chairman of the convention, whose duty it shall be to present a memorial to Congress setting forth explicitly the loss and damage we have sustained in our business, not only by reason of the fact that contagious diseases do exist to a limited extent in this country, but also of the much greater loss and damage we sustain by reason of the embarrassing restriction, and, in some cases, prohibitory regulations which have been adopted by foreign Governments against American live stock and their meat products. We further recommend that said committee be instructed to confer with the Secretary of the Treasury, the Commissioner of Agriculture, and such other officials and persons as to them shall be deemed proper, and shall thereafter suggest to Congress such points of legislation as they may deem best calculated to protect our interests and remove foreign prejudice against our meat productions. We further recommend that all live stock organizations in the United States be invited to cooperate with us by advice, suggestions and cash subscriptions, to be used in defraying the necessary expenses of said committee; and, further, that the said invitation be extended to transportation and stock-yard companies, beef and pork packers and exporters, and all others having an interest in common with us in this matter. We further recommend that the President of this convention be requested to invite the Hon. George B. Loring, Commissioner of Agriculture, to act as ex-officio Chairman of this committee of five before referred to.

Mr. Grinnell said the resolution met with his approval, but moved that the committee be increased from five to nine members.

This was agreed to, but subsequently the Secretary moved to

reconsider and further amend it, by striking out the words "a committee of five" and substituting therefor "one delegate from each State represented."

This was agreed to by unanimous consent, and the resolution, as amended, was adopted.

The following committee was then selected: Hon. J. M. Carey, Wyoming Territory; Hon. Columbus Delano, Ohio; W. J. Wilson, Colorado; N. M. Curtis, New York; D. W. Smith, Illinois; Julius Lemoyne, Pennsylvania; J. B. Grinnell, Iowa; T. C. Anderson, Kentucky; G. B. Loving, Texas; H. Smith, Wisconsin; J. M. Kirk, West Virginia; Prof. S. R. Thompson, Nebraska; John Overton, Tennessee; Prof. F. J. Hunt, New Jersey; John M. Robinson, Maryland; Prof. D. E. Salmon, District of Columbia; Dr. L. S. Thayer, Massachusetts; W. Ball, Michigan.

The following resolution was adopted:

Resolved, That the Secretary be appointed from a central point in the West, who shall correspond with the members of the committee selected to go to Washington; shall ascertain what members will actually go; shall communicate to each of those members who are to be their associates, and appoint a fixed day for their meeting in Washington, and thus insure unanimity of action. He shall provide the Chairman with proper credentials and obtain proxies if originals cannot go.

Hon. J. B. Grinnell was elected Secretary of the committee referred to in the above resolution.

The following resolutions were read and adopted without debate:

Resolved, That the committee of this convention memorialize the Legislatures of the several States or executive authorities to urge upon them the importance of establishing a veterinary or health department, for the prevention or spread of all such contagious diseases.

Resolved, That the thanks of this convention are due to Hon. George B. Loring, for the hearty and efficient manner in which he has co-operated with the live stock breeders of the United States, and the eminent aid he has given us; and that the President of this convention be requested to invite him to act as ex-officio Chairman of the committee which he shall appoint in accordance with the foregoing resolutions.

Another resolution was also adopted, instructing the Chairman and Secretary to call another national convention of stockmen to meet in Chicago during the week of the next Fat Stock Show.

A vote of thanks was then given to the President and Secretary, as also to the representatives of the press, after which the meeting adjourned.

VETERINARY SANITARY SERVICE IN MANITOBA.

Fortunately, Manitoba has enjoyed a singular immunity from infectious or contagious diseases of animals. With the exception of isolated cases of glanders and anthrax, and mange in certain districts, nothing in the nature of serious disease has occurred, and an epidemic has never broken out in the Province. In view, however, of the extension of communication both east and west, and of the opening of cattle ranches in the grazing districts of the Northwest Territories, a more stringent law than the one hitherto in force became necessary. Chapter 52 of the Consolidated Statutes, known as an Act respecting contagious and infectious diseases of domestic animals, was so cumbersome in its operation that its repeal was secured at the last session of the Legislative Assembly, its place being taken by part of Agriculture, Statistics and Health Act, which contains provisions based on the English Animals' Diseases Act, modified to suit the requirements of this newer country, and with special provision for dealing with glanders and farcy.

The Department has been engaged for some time past in arranging to put the new law in operation, and has succeeded in organizing a veterinary sanitary service of such a complete nature as cannot be found elsewhere on the continent. It is safe to say that no Province of the Dominion, or State of the American Union, has so thorough an organization with which to meet and stamp out an epidemic, should one unfortunately occur.

Dr. W. McEachran, V.S., who has been acting as Consulting Veterinarian to the Board of Agriculture for the

Province for some time past, has been appointed Consulting Veterinarian to the Department at a fixed salary. He will advise the Department on veterinary matters, and is empowered to exercise jurisdiction in any portion of the Province.

It is the intention of the Department to appoint one qualified veterinary surgeon in each county in the Province, thus making twenty-two in all. It has not been practicable to carry out this intention at present, owing to some districts being without a resident veterinary surgeon, and in such cases the district veterinarian for a neighboring county has been given jurisdiction over two or more.

The district veterinarians are to be paid at a fixed rate per day while actually employed by the Department, and a reasonable amount for mileage.

The following is a complete list of the veterinarians so far appointed, the list previously published having been incomplete and incorrect in several important particulars:

Counties of Manchester and Carillon, D. H. McFadden, of Emerson.

County of Morris, Alexander Porteous, of West Lynne.

Counties of Dufferin and Rock Lake, Matthew Young, of Pembina Crossing.

County of Brandon, Frederick Torrance, of Brandon.

Counties of Minnedosa, Riding Mountain, Shoal Lake, and Russell, David McNaught, of Rapid City.

Counties of Norfolk and Beautiful Plains, Samuel J. Thompson, of Carberry.

County of Selkirk, William McEachran, of Winnepeg.

Counties of Lisgar, Gimli, Plessis, and Varennes, John E. Gemmel, of Selkirk.

County of D'Iferville, John Loughman, of Winnepeg.

County of Lorette, Christopher Taylor, of Winnepeg.

Counties of Marquette and Fairford, Charles Little, of Winnepeg.

County of Westbourne, William Alexander Dunbar, of Winnepeg.

A pamphlet of instructions for the above officials is now being

prepared in the Department, and will be issued at an early date. It is also understood that slips containing brief descriptions of the symptoms of the principal infectious and contagious diseases, with hints as to the best mode of treatment in cases where it is impossible to obtain a veterinarian, will be distributed through the Province.

SOCIETY MEETINGS.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The regular monthly meeting of the Keystone Veterinary Medical Association was held at Camden on the evening of Dec. 1st, 1883, President Zuill presiding. On roll call, Drs. Zuill, Miller, Rogers, Campbell and Hoskins were present. The following amendment to the by-laws was laid upon the table for futnre action: "That the officers of this Association shall be elected by ballot, at each anniversary meeting, and a majority of all votes present shall be necessary for a choice."

Dr. Hoskins then brought before the Association an important question that had arisen with him. In a few remarks he traced up the calling and holding of the State Convention, its action on the admission of members, and that this had brought some of the members of this Association in close communication with certain irregular members of the profession. Through committee meetings and otherwise they had been brought in contact with these self-made men, and would need their support in securing legislation in the future. He spoke of some that he had met as good practitioners—men who assumed none of the ways of empirics; of their intelligent mode of practicing, and having at their time of entering the profession absorbed the best opportunities of becoming proficient in their calling that then existed, and that under these circumstances he favored recognizing them to the degree of consulting with them in the future. He believed that a careful discrimination in this matter would lead to no discredit, and trusted that it might not be an entering wedge for the commingling of qualified men with empirics.

Dr. Rogers believed that such digressions, carefully made, would lead to no trouble, but urged that no new men irregularly engaged in the profession be recognized, as opportunities for their proper qualification were now plentiful. His remarks were endorsed by Dr. Miller, and thoroughly acquiesced in by Dr. Hoskins. Some remarks followed also as to the low standard some schools were adopting.

Dr. T. B. Rogers, milk inspector of southern district of New Jersey, then read an essay on "Milk." His object was to enlighten the members on the methods of examining pure and impure lacteal fluids.

In his remarks he stated that the fats varied much, but the other solids not fats were almost constant, ranging about ¼ of 1 per cent. The lactometer is used in America, which is a finely adjusted hydrometer. The 100 mark is placed at 1,029, which is the mean analysis for milk, based on the examination of milk from several thousand herds; the specific gravity of water being 1,000, of milk 1,029 at the lowest pure state. A difference of temperature of milk makes a difference in specific gravity; the colder the milk, the more it is in favor of the milkman; the warmer it is, the more in favor of the State. It should be about 60 per cent. The lactometer is not the entire test, for the more milk is skimmed the higher it goes; for, as you remove the lighter parts in the shape of cream, the denser becomes that remaining, and, when watered, buoys up the lactometer. Good whole milk will have no blue line when exposed in a glass vessel; a little water gives the line; 12 per cent. of solids is necessary for good milk, with at least 3 per cent. of fats. Examinations by the Board of Inspectors showed that there was no relative difference between evening's and morning's milk; sometimes the morning's was better, and at other times the evening's exceeded in richness. Salicylic and boracic acids were used to preserve the milk, and chalk or bicarbonate of soda were used when the milk was of an acid tendency. These points were valuable to physicians, as they became of importance in certain cases of illness when such milk was being used.

The writer gave as a quick practical analysis the following

mode of procedure: Evaporate a given amount of milk on a water bath for three hours, and the loss of weight represents the amount of water it contained; that left in the pan is total solids. To ascertain the amount of fat, wash with ether till it ceases to lose weight again; this may be repeated. Ether will only take up the fatty products, then the solids, not fat, are left. To determine amount of caseine, wash the residue in pan with strong alcohol cold, then with hot water, and filter; what goes through the filter is sugar and chlorides; that on the filter is caseine; that in the pan solids not soluble. He scouted the idea that our animals, in drinking water, etc., containing the germs of scarlet fever, etc., carried them through their system and to the milk, and thus produced these diseases in the human family; but by washing the milk churns, etc., in water contaminated by drains from water-closets and elsewhere, the milk became the conveyance for these germs, and even a cultivator of them.

Much discussion followed on the milk of pleuro-pneumonia cattle, and reference was made to milk from animals affected with tuberculosis.

Specimens of ensilage matter in a sealed jar were brought before the meeting by Dr. Rogers. It proved to be fresh, sweet and green, and we could readily perceive its value for feeding purposes in the winter. This was cut green and placed in a pit, covered with boards, and then about five feet of dirt placed over it.

On motion, the meeting adjourned to the infirmary of Dr. Miller, where an interesting case was shown to the members. The doctor claimed it to be a case of laminitis, followed by muscular rheumatism. Several different diagnoses were made by other members, and a warm discussion followed.

W. Horace Hoskins, *Secretary.*

Philadelphia, Pa., Dec. 9, 1883.

At a meeting of the Pennsylvania State Veterinary Medical Association, held on the evening of the above date (Vice-President Dr. Schaufler in the chair), the presiding officer announced

that this special meeting was called for the purpose of taking action in regard to the National Convention to be held in Chicago on the 12th of December.

The meeting being open for remarks, much active discussion followed by nearly all the members present, after which, owing to the time being so short, and that the State societies had not been consulted as to the wisdom of such a course, a motion that we send a delegate or delegates to the National Convention, was defeated by a vote of 11 to 6. W. Horace Hoskins.

CORRESPONDENCE.

FATAL WOUND OF THE NECK BY GNAWING.

New Rochelle, Oct. 24th, 1883.

Editor Veterinary Review:

Dear Sir:—The circumstance about to be described is the first of its kind that has come to my knowledge, being a wound that could not be sutured, the tissue being entirely destroyed or eaten away. Thinking the case of interest, I forward it for publication.

There was sent to me a bay gelding for treatment, which by his action and form I thought might be a ridgling, and so took extra precautions in securing him in my stable. On the night of the 13th he succeeded in getting loose, when he then had free access to my mare. She being secured, could not protect herself, and on my arrival at the stable in the morning, I found the gelding in the stall with my mare, both in a profuse perspiration. In examining the mare I found that the muscles of the right cervical region (both deep and superficial) had been completely eaten away, through the cervical ligament to muscles of left side, to the extent of 12 to 15 inches in length. The animal had then commenced to eat on the left side, which made an opening directly through the neck, nearly 4 inches in diameter, exposing the cervical angle and part of the cartilage of prolongment of the scapula. There was nothing left, comparatively speaking, of muscles supporting the head, but the fununcular portion of the

cervical ligament. On my arrival the mare was utterly prostrated from loss of blood and shock to her system.

Excepting the injury to the neck there was not a blemish upon either animal.

After consulting with Dr. Wray, I destroyed her.

Respectfully yours,

H. B. Boyd, D.V.S.

OBITUARY.

The veterinary profession of Belgium are regretting the loss of two of its most eminent members, whose names are familiar to all veterinarians through the numerous writings which they have given to the world, and by their labors in behalf of Belgian veterinary science, as well as by their connection with veterinary education.

Louis Valentine Delwart was born in 1801, and died at the age of 82 years, last November. Having obtained his degree in that great nursery of veterinarians, Alfort, in 1824, he soon returned to his native country, where after a few years, in 1832, he united with Brogniez and Crevecœur, veterinarians, and Froidmont and Graux, doctors of medicine, in founding the Veterinary School of Brussels. The last of the founders of this excellent institution, where he was successively Professor and Director, he retired from active duties in 1867, when he was complimented with the appointment of Emeritus Director. He was held in great esteem by all his students, the large number of graduates whose diplomas bore his signature being accustomed to call him "*Father Delwart.*" He has given the profession a large number of writings. Amongst the principal works are to be named his "Pathologie Speciale," his "Traité de Médecine Vétérinaire Pratique," his "Parturition des Principales Femelles Domestiques," and his pamphlet on "Carcinome du Pied du Cheval."

Theodore August Thiernesse was born in 1812. At the age of twenty-one he entered the School of Brussels, where he grad-

uated, and to which he was immediately attached as Assistant Demonstrator, Professor, and (in 1867, when Delwart retired) Director. He was a man of large intelligence, a hard worker, and always ready to do what he could to advance his profession and aid his colleagues. A member of numerous societies in Belgium, France, Germany, Russia. and Italy, he received the last acknowledgment and recognition of his eminent qualities that the veterinary profession could bestow upon him, in his appointment to the post of Permanent Honorary President at the Fourth International Veterinary Congress. He has left to the profession numerous pamphlets and other writings on various veterinary subjects, many of which are found in the *Annales de Bruxelles.*

The November number of the *Clinica Veterinaria* brings us also the sad news of the death of Prof. Giovanni Battista Ercolani, Director of the Veterinary School of Turin, which took place on the 16th of November at Bologne. Sixty-four years of age, though of a delicate constitution and suffering with a disease which must have rendered his life a burden and which lasted for a long time, Ercolani has done much for the veterinary profession in Italy, and has left not less than one hundred and thirty-six pamphlets and books relating to veterinary as well as to human medicine, adding in this way to the great and wealthy collection of researches in comparative medicine.

VETERINARY HONORS.

The decoration of the Merite Agricole — instituted a few months ago — has been received by Mr. P. Genée, veterinary surgeon; Mr. Teisserenc de Bort, Senator, late Secretary of Agriculture and President of the Commission of Epizooties; Mr. Tisserand, Director of Agriculture; Mr. Chazely, Professor of Zootechnie; Mr. Megnin, Military Veterinary Surgeon.

NEWS AND SUNDRIES.

Hog Cholera.—Hog cholera continues to rage along the Sangamon River in the vicinity of Dewey, Illinois. One farmer has lost 117 out of 130 head.—*Journal of Agriculture.*

Cattle Plague.—The cattle plague shows no abatement in the District of Odessa, Russia. Within seventeen days 1,800 head of cattle have perished.—*American Cultivator.*

Prolific Cow.—A cow in Hart county, Kentucky, recently gave birth to five calves at one time, three of which were well developed, alive and healthy, and two dead.—*Journal of Agriculture.*

Pleuro-Pneumonia.—Philadelphia papers are informed by Dr. Bridge and Thos. J. Edge that pleuro-pneumonia has been stamped out in Delaware and Chester counties at a total cost to the State of only $3,500.—*Cul. and Country Gent.*

New Litmus Paper.—Dr. Squibb has substituted for the ordinary blue and red litmus paper a single color, viz., purple. This purple litmus paper turns red with acids, blue with alkalies. It is claimed to be much more delicate and convenient.— *W. Med. Reporter.*

Scab in Sheep.—Dr. MacEachran, Dominion Government Inspector of Live Stock, has prevented the shipment to Liverpool of 2,000 sheep from Ontario on finding fourteen of them afflicted with scab. Some shippers there have lost large sums lately through this disease having infected the flocks and prevented shipment.—*Country Gentleman.*

Rinderpest Coming West.—The following statement appears in English papers: "The rinderpest, or cattle plague, which is prevalent in Southeastern Russia, has appeared in Silesia. It has leaped across the European continent, following the course of the plague of 17 years ago. It is now within three days' journey of Hull and the northeastern ports. Assuming that this rinderpest is identical in subtlety and malignancy with that of 1866, which inflicted a colossal loss on the agriculturists of this country—in

Cheshire alone it was about a million sterling—it is the obvious duty of the crown authorities to instantly adopt the extremest precautions to prevent the introduction of it into the ports of Great Britain.—*American Cultivator.*

ACTINOMYCOSIS DISCOVERED IN AMERICAN CATTLE.—Dr. William T. Belfield, of Chicago, has made the important discovery that actinomycosis exists in American cattle. He was asked by the Commissioner of Health of Chicago to investigate a disease in cattle which has generally been known as "swell-head," and has been called by veterinarians cancer, sarcoma, etc. Five animals were examined by Dr. Belfield, and a very short study of the specimens under the microscope revealed the true nature of the disease. Actinomycosis was only recognized six years ago by Bollinger, of Munich, who announced that it was a parasitic disease due to the presence of a rapidly growing fungus. It has since been discovered in the hog and in man. It generally first attacks the jaws, and probably gains access to the deeper tissues through carious or defective teeth. It spreads into the tissues of the head, causing tumefactions, suppuration, finally, if unchecked, pyæmia and death. It may gain the blood and be transferred to other parts of the body. This happens especially with man, upon whom the parasite acts most virulently. It is supposed that its source is the grain with which animals are fed. The disease is generally fatal, though prompt measures may check it. The meat of animals dying from actinomycosis is not of first quality. It is not, however, yet known that it is absolutely injurious. Thorough cooking, at any rate, destroys the parasite. Dr. Belfield's discovery is an important one, and should become promptly known to veterinarians and sanitary officials.—*Medical Record.*

EXCHANGES, ETC., RECEIVED.

HOME.—American Agriculturist, Prairie Farmer, Practical Farmer, National Live Stock Journal, Turf, Field and Farm, Spirit of the Times, Druggists' Circular, Country Gentlemen, Breeders' Gazette, American Cultivator, Medical Record, Ohio Farmer, Rural New Yorker.

FOREIGN.—India Quarterly Veterinary Journal, Clinica Veterninaria,

Veterinary Journal, Veterinarian, Archives Veterinaires, Recueil de Medecine Veterinaire, Journal de Zoötechnie, Revue de Hygiene, Gazette Medicale, Revue Scientifique, Revue fur Thierheilkunde und Thierzucht, Presse Veterinaire.

PAPERS.—Manitoba Daily Free Press, Polyclinic, Farmers' Review, Home Farm, Weekly Times, Journal of Agriculture, Southern Cultivator, Medical Herald, &c., &c.

PAMHPLETS.—Electro-Osteotome, by M. J. Roberts, M.D.

BOOKS.—Williams' Practice of Medicine; J. Signol, Aide Mémorie du Veterinaire; Congresso Nazionale dei docenti e Pratice Veterinare Italiani.

CORRESPONDENCE.—F. S. Billings, J. C. Meyer, Jr., A. J. Murray, A. B. Morse, W. Devoe, R. S. Huidekoper, J. Law, H. W. Hoskins, M. E. Knowles.

NOTICE (*Editorial*).—We are obliged to postpone the publication of many important communications on account of the crowding of this issue. Gentlemen desirous to send us material for the REVIEW are earnestly requested to do it before the 20th of each month.